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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/807,174	03/24/2004	Yoshihiro Nakata	011293A	4205

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EXAMINER	
VO, HAI	

ART UNIT	PAPER NUMBER
1771	

DATE MAILED: 03/31/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/807,174	NAKATA ET AL.	
	Examiner	Art Unit	
	Hai Vo	1771	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *30 January 2006*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-7* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-7* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

1. The double patenting rejections have been withdrawn in view of the terminal disclaimers.
2. The 102 art rejections over Yamamura et al (US 4,778,722) are maintained.
3. The art rejections over JP 2001-127152 taken individually or collectively are maintained.
4. The art rejections based on Rutherford et al (US 6,318,124) have been withdrawn in view of Applicants' arguments (see pages 7 and 8 of the 01/20/2006 amendment). However, upon further consideration, new grounds of rejections are made in view of Rutherford et al (US 6,318,124) and JP 2001-127152.

Terminal Disclaimer

5. The terminal disclaimers filed on 01/20/2006 disclaiming the terminal portion of any patent granted on this application which would extend beyond the expiration date of US 6,613,834 and US 6,780,498 have been reviewed and are accepted. The terminal disclaimers have been recorded.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by Yamamura et al (US 4,778,722) substantially as set forth in the 10/28/2005 Office Action.

8. Claims 1-3, and 5-7 are rejected under 35 U.S.C. 102(a) as being anticipated by JP 2001-127152 substantially as set forth in the 10/28/2005 Office Action.

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

10. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over JP 2001-127152 as applied to claim 1 above, further in view of JP 64-009231 substantially as set forth in the 10/28/2005 Office Action.

11. Claims 1-3, and 5-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rutherford et al (US 6,318,124) in view of JP 2001-127152. Rutherford teaches a coating composition comprising a compound that is selected from a group consisting of a low organic siloxane, a high organic siloxane, a hydridiorganoorganosiloxane, a poly(arylene ether), a fluorinated poly(arylene) ether, a polyimide, a polycarbosilane and combinations thereof (column 10, lines 30-36). Rutherford teaches the polycarbosilane having a structure represented by formula $-[Si(R1)(R2)H]_x-$ wherein R1 is an alkylene; R2 is H and x is from 10 to 100,000 (column 12, line 67 to column 13, lines 1-10). The siloxane resin has a structure wherein the mole percent of carbon is in the range of about 15 mole percent to 25 mole percent within the

claimed range (column 11, lines 50-51). Rutherford teaches the siloxane has a structure represented by formula $[H\text{-}SiO_{1.5}]_x[R\text{-}SiO_{1.5}]_y[SiO_{1.5}]_z$ (formula 4). When x = 1, y = 1, z = 6 and R is CH3, the hydrogen concentration is about 15 atom% based on the total atoms of the siloxane resin. Rutherford does not disclose the coating composition made from a specific combination of a siloxane resin and a polycarbosilane. JP'152 teaches an insulation film which is low in dielectric constant and superior in heat resistance and moisture resistance made from a composition comprising a mixture of polycarbosilane, siloxane resin and a solvent wherein a polycarbosilane (formula 3) and a siloxane resin (formula 1) having the structures as set out in the claims (see claim 1). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to form a coating compound made from a specific combination of a polycarbosilane and a siloxane resin motivated by the desire to provide an insulation film which is low in dielectric constant, superior in heat resistance and moisture resistance.

Rutherford does not specifically disclose the weight ratio of polycarbosilane to siloxane resin in the coating composition. However, such a variable would have been recognized by one skilled in the art to achieve enhanced mechanical strength and improvements in film surface hydrophobicity. As such, in the absence of unexpected results, it would have been obvious to one having ordinary skill in the art at the time the invention was made to employ the molar ratio in the range instantly claimed motivated by the desire to achieve enhanced mechanical strength and improvements in film surface hydrophobicity since it has been held that where the

general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. ***In re Aller***, 105 USPQ 233.

12. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Rutherford et al (US 6,318,124) in view of JP 2001-127152 as applied to claim 1 above, further in view of JP 64-009231. Rutherford does not specifically disclose how the siloxane resin is formed. JP'231, however, teaches siloxane polymer being formed from heat treatment of a mixture containing tetralkoxysilane and trialkoxysilane and alcohol is released from the mixture to form a siloxane polymer. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to use the method as taught by JP'231 to produce a siloxane polymer because such is known in the art and JP'231 provides necessary details to practice the invention of Rutherford.

JP'231 does not specifically disclose the molar ratio of tetralkoxysilane and trialkoxysilane as well as the amount of alcohol removed from the mixture. However, such a variable would have been recognized by one skilled in the art as dependent upon the intended use of the product. As such, in the absence of unexpected results, it would have been obvious to one having ordinary skill in the art at the time the invention was made to employ the molar ratio in the range instantly claimed motivated by the desire to form a siloxane polymer within a short time, thereby giving an insulation film with improved heat resistance, adhesion and cracking resistance since it has been held that where the general conditions of a

claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. ***In re Aller***, 105 USPQ 233.

Response to Arguments

13. The art rejections based on Yamamura have been maintained for the following reasons. Applicants argue that Yamamura teaches a polymetallosiloxane which is not a siloxane resin as required by the claims. The arguments are not found persuasive for patentability because they are not commensurate in scope with the claims. As a matter of fact, polymetallosiloxane is a siloxane resin and hence the "siloxane resin" as recited in claim 1 actually does not exclude polymetallosiloxane as disclosed by Yamamura. Accordingly, the art rejections over Yamamura are sustained.

14. The art rejections based on JP'152 have been maintained for the following reasons. Applicants argue that the composition of JP '152 is chemically different because JP '152 discloses a ratio of carbon to silicone of 1:1 in the composition. The examiner respectfully disagrees. JP' 152 teaches a composition comprising a mixture of polycarbosilane, siloxane resin and solvent (claim 1). The polycarbosilane reads on Applicants' silicon compound while the siloxane resin with formula 1 reads on Applicants' siloxane resin. Since the polycarbosilane of JP '152 having a structure represented by formula 3 is identical to the structure of the presently claimed silicon compound, it is not seen that the ratio of carbon to silicone of the polycarbosilane would have been outside the claimed range as alleged by Applicants. Accordingly, the art rejections are sustained.

Conclusion

15. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

16. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hai Vo whose telephone number is (571) 272-1485. The examiner can normally be reached on Monday through Friday, from 9:00 to 6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Terrel Morris can be reached on (571) 272-1478. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

HV

Hai Vo

HAI VO
PRIMARY EXAMINER